

**REMARKS**

Claims 1, 4-17, 25-29, and 31-34, 36, and 37 were pending the application.

Claims 7, 8, 15, 16, 34, 36, and 37 have been canceled, without prejudice, and claims 9 and 29 have been amended. Accordingly, upon entry of this amendment, claims 1, 4-6, 9-17, 25-29, and 31-33 will be pending.

Support for the amendments to the claims may be found throughout the specification, including the originally filed claims.

*No new matter has been added* Any amendments to the claims was done solely to more particularly point out and distinctly claim the subject matter of Applicants' invention in order to expedite the prosecution of the application. Applicants reserve the right to pursue the claims as originally filed in this or a separate application(s).

**Allowed Claims**

Applicants gratefully acknowledge the Examiner's indication that claims 1, 4-6, 10-14, 16, 17, 25-28, and 31-33 are allowed.

**Priority**

The Examiner has stated that

As previously noted without certified copies of the foreign applications whose foreign priority has been requested (27 German applications) priority cannot be granted. Acknowledgment is made of applicant's claim for foreign priority based on applications (27 total) filed in Germany.

Applicants respectfully submit that Applicants will provide certified copies of all of the German applications to which this application claims priority prior to issuance a patent based on the instant application.

**Objections to the Specification**

The Examiner has maintained the objection to the specification "for being confusing in its description of SEQ ID NOs:1/2 as described in Table 1." In particular, the Examiner

states that "Applicants attempted to amend Table 1; however, this amendment could not be entered. An entire replacement page must be submitted to affect the proposed changes to the specification."

As requested by the Examiner, Applicants have amended Table 1 to correct the typographical error in Table 1 and submit herewith a replacement page 1 of Table 1. Accordingly, Applicants respectfully request reconsideration and withdrawal of the aforementioned objection.

**Objections to the Claims**

The Examiner has objected to claim 15 under 37 C.F.R. § 1.75(c), "as being of improper dependent form for failing to further limit the subject matter of a previous claim." In particular, the Examiner is of the opinion that "perhaps the claim could further limit if the expression of the nucleic acid molecule directly resulted in the production of a particular fine chemical."

Applicants respectfully traverse the foregoing objection. However, in the interest of expediting prosecution and in no way acquiescing to the Examiner's objection, Applicants have canceled claim 15, thereby rendering the instant objection moot. Accordingly, Applicants respectfully request reconsideration and withdrawal of the foregoing objection to the claim.

**Rejection of Claim 29 Under 35 U.S.C. §112, Second Paragraph**

The Examiner has maintained the rejection of claim 29 under 35 U.S.C. § 112, second paragraph, "as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention."

Applicants respectfully traverse the foregoing rejection. However, in the interest of expediting prosecution and in no way conceding to the validity of the Examiner's position, claim 29 has been amended to delete *Brevibacterium healii* and *Brevibacterium ketoglutamicum*. Accordingly, in light of the foregoing, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 112, second paragraph rejection.

**Rejection of Claims 7-8 and 34 Under 35 U.S.C. §112, First Paragraph**

The Examiner has maintained the rejection of claims 7-8 and 34 under 35 U.S.C. § 112, first paragraph, written description.

Applicants respectfully traverse the foregoing rejection. However, in the interest of expediting prosecution and in no way conceding to the validity of the Examiner's position, claims 7, 8, and 34 have been canceled, thereby rendering the foregoing rejection moot. Accordingly, Applicants respectfully requests reconsideration and withdrawal of the foregoing rejection.

**Rejection of Claims 7-8 and 34 Under 35 U.S.C. §112, First Paragraph**

The Examiner has maintained the rejection of claims 7-8 and 34 under 35 U.S.C. § 112, first paragraph, enablement.

Applicants respectfully traverse the foregoing rejection. However, in the interest of expediting prosecution and in no way conceding to the validity of the Examiner's position, claims 7, 8, and 34 have been canceled, thereby rendering the foregoing rejection moot. Accordingly, Applicants respectfully requests reconsideration and withdrawal of the foregoing rejection.

**Rejection of Claims 7 and 8 Under 35 U.S.C. §102**

The Examiner has maintained the rejection of claims 7 and 8 under 35 U.S.C. § 102(b) as being "anticipated by Marra *et al.* (GenBank Accession Number AA915356 (April, 1998) v229z08.rl Soares\_thymus\_2NbMT *Mm musculus* cDNA clone)."

Applicants respectfully traverse the foregoing rejection. However, in the interest of expediting prosecution and in no way conceding to the validity of the Examiner's position, claims 7 and 8 have been canceled, thereby rendering the foregoing rejection moot.

**Rejection of Claims 36 and 37 Under 35 U.S.C. §112, Second Paragraph**

The Examiner has rejected claims 36 and 37 under 35 U.S.C. § 112, second paragraph, "as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention."

Applicants respectfully traverse the foregoing rejection and respectfully submit that claims 36 and 37 are clear and definite. However, in the interest of expediting prosecution and in no way conceding to the validity of the Examiner's position, claims 36 and 37 have been canceled, thereby rendering the foregoing rejection moot. Accordingly, Applicants respectfully request reconsideration and withdrawal of the foregoing rejection.

**Rejection of Claim 9 Under 35 U.S.C. §112, First Paragraph**

The Examiner has rejected claim 9 under 35 U.S.C. § 112, first paragraph, written description and enablement "for the reasons noted previously and above for claims 7 and 8."

Applicants respectfully traverse the foregoing rejection and respectfully submit that claim 9 has been amended such that it is no longer dependent upon claim 7, and is only dependent upon allowed claims 1 and 4-6. Accordingly, Applicants respectfully request reconsideration and withdrawal of the foregoing rejection.

**Rejection of Claim 9 Under 35 U.S.C. §102(b)**

The Examiner has rejected claim 9 under 35 U.S.C. §102(b) "as being anticipated by Marra *et al.* for the reasons previously noted and maintained above for Claim 7 since the remainder of the Marra *et al.* sequence can be considered heterologous to the fragment of SEQ ID NO:1 embedded within."

Applicants respectfully traverse the foregoing rejection. Applicants respectfully submit that, contrary to the Examiner's assertion, the "remainder of the Marra *et al.* sequence" would not encode *heterologous polypeptide*, as is required by the claim. Furthermore, Applicants respectfully submit that claim 9 has been amended such that it is no longer dependent upon claim 7, and is only dependent upon allowed claims 1 and 4-6. Accordingly, Applicants respectfully request reconsideration and withdrawal of the foregoing rejection.

USSN: 09/602,740

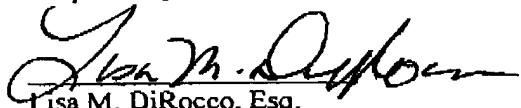
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Group Art Unit: 1652

**SUMMARY**

If a telephone conversation with Applicants' Attorney would expedite the prosecution of the above-identified application, the examiner is urged to call the undersigned at (617) 227-7400.

Respectfully submitted,

  
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Dated: February 17, 2004

TABLE 1: GENES IN THE APPLICATION

## HMP:

Nucleic Acid Seq ID No	Amino Acid Seq ID No	Identification Code	Contig	NT Start	NT Stop	Function
1 2	RXN02735	W00074	14576	15280	6	Phosphoglucimidase
3 4	RXA01526	GR00452	4270	3926	1	L-ribulose-phosphate 4-epimerase
5 6	RXA02245	GR00634	13639	14295	4	RIBULOSE-PHOSPHATE 3-EPIMERASE (EC 5.1.3.1)
7 8	RXA01015	GR00290	346	5	5	RIBOSE 5-PHOSPHATE ISOMERASE (EC 5.3.1.6)

## TCA:

Nucleic Acid Seq ID No	Amino Acid Seq ID No	Identification Code	Contig	NT Start	NT Stop	Function
9 10	RXN01312	W00062	20803	10785	1	SUCCINATE DEHYDROGENASE FLAVOPROTEIN SUBUNIT (EC 1.3.99.1)
11 12	F_RXA01312	GR00380	2690	1614	1	SUCCINATE DEHYDROGENASE FLAVOPROTEIN SUBUNIT (EC 1.3.99.1)
13 14	RXN02331	W00083	15484	14015	1	SUCCINATE-SEIMAL DEHYDROGENASE (NADP+) (EC 1.2.1.16)
15 16	RXA01311	GR00038	1611	865	1	SUCCINATE DEHYDROGENASE IRON-SULFUR PROTEIN (EC 1.3.99.1)
17 18	RXA01535	GR00427	1354	2760	1	FUMARATE HYDRATASE PRECURSOR (EC 4.2.1.2)
19 20	RXA00517	GR00131	1407	2447	1	MALATE DEHYDROGENASE (EC 1.1.1.37) (EC 1.1.1.82)
21 22	RXA01350	GR00392	1844	2827	1	MALATE DEHYDROGENASE (EC 1.1.1.37)

## EMB-Pathway

Nucleic Acid Seq ID No	Amino Acid Seq ID No	Identification Code	Contig	NT Start	NT Stop	Function
23 24	RXA02149	GR00639	17766	18754	1	GLUCOKINASE (EC 2.7.1.2)
25 26	RXA01814	GR00515	2571	910	1	PHOSPHOGLUCOMUTASE (EC 5.4.2.2) (EC 5.4.2.8)
27 28	RXN02803	W00086	1	657	1	PHOSPHOGLUCOMUTASE (EC 5.4.2.2) (EC 5.4.2.8)
29 30	F_RXA02603	GR00784	2	400	1	PHOSPHOGLUCOMUTASE (EC 5.4.2.2) (EC 5.4.2.8)
31 32	RXN03076	W00043	1624	35	1	PHOSPHOGLUCOMUTASE (EC 5.4.2.2) (EC 5.4.2.8)
33 34	F_RXA02854	GR1002	1588	5	1	PHOSPHOGLUCOMUTASE (EC 5.4.2.2) (EC 5.4.2.8)
35 36	RXA00511	GR00129	1	513	1	PHOSPHOGLUCOMUTASE (EC 5.4.2.2) (EC 5.4.2.8)

MARKED-UP VERSION

Table 1, Page 1

TABLE 1: GENES IN THE APPLICATION

## HMP:

Nucleic Acid Seq ID No	Amino Acid Seq ID No	Identification Code	Comis	NT Start	NT Stop	Function
1 2	RXN02735	WV0074	14576	15280		6-Phosphogluconolactonase
3 4	RXA01626	GR00452	4270	3926		L-ribulose-phosphate 4-epimerase
5 6	RXA02245	GR00534	15839	14295		RIBULOSE-PHOSPHATE 3-EPIMERASE (EC 5.3.1.3)
7 8	RXA01015	GR00290	346	5		RIBOSE 5-PHOSPHATE ISOMERASE (EC 5.3.1.6)

## TCA:

Nucleic Acid Seq ID No	Amino Acid Seq ID No	Identification Code	Comis	NT Start	NT Stop	Function
9 10	RXN01312	WV00862	20803	18785		SUCCINATE DEHYDROGENASE FLAVOPROTEIN SUBUNIT (EC 1.3.99.1)
11	F RXA01312	GR00380	2690	1614		SUCCINATE DEHYDROGENASE FLAVOPROTEIN SUBUNIT (EC 1.3.99.1)
13	14	RXN00231	WV00863	15484	14015	SUCCINATE-SEMPLE DEHYDROGENASE (NADP <sup>+</sup> ) (EC 1.2.1.16)
15	16	RXA01311	GR00380	1611	865	SUCCINATE DEHYDROGENASE IRON-SULFUR PROTEIN (EC 1.3.99.1)
17	18	RXA01535	GR00427	1354	2760	FUMARATE HYDRATASE PRECURSOR (EC 4.2.1.2)
19	20	RXA00517	GR00131	1407	2447	MALATE DEHYDROGENASE (EC 1.1.1.37) (EC 1.1.1.87)
21	22	RXA01350	GR00392	1844	2827	MALATE DEHYDROGENASE (EC 1.1.1.37)

## EHB-Pathway

Nucleic Acid Seq ID No	Amino Acid Seq ID No	Identification Code	Comis	NT Start	NT Stop	Function
23	24	RXA02149	GR00639	17786	18754	GLUCOKINASE (EC 2.7.1.2)
25	26	RXA01614	GR00515	2571	910	PHOSPHOGLUCOMUTASE (EC 5.4.2.2) / PHOSPHOMANNO-MUTASE (EC 5.4.2.8)
27	28	RXN02803	WV0086	1	657	PHOSPHOGLUCOMUTASE (EC 5.4.2.2) / PHOSPHOMANNO-MUTASE (EC 5.4.2.8)
29	30	F RXA02803	GR00784	2	400	PHOSPHOGLUCOMUTASE (EC 5.4.2.2) / PHOSPHOMANNO-MUTASE (EC 5.4.2.8)
31	32	RXN03076	WV0043	1624	35	PHOSPHOGLUCOMUTASE (EC 5.4.2.2) / PHOSPHOMANNO-MUTASE (EC 5.4.2.8)
33	34	F RXA02854	GR10002	1588	5	PHOSPHOGLUCOMUTASE (EC 5.4.2.2) / PHOSPHOMANNO-MUTASE (EC 5.4.2.8)
35	36	RXA00511	GR00128	1	513	PHOSPHOGLUCOMUTASE (EC 5.4.2.2) / PHOSPHOMANNO-MUTASE (EC 5.4.2.8)

Attorney Docket No.: BGI-126CP

Application No. (if known):

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